Claims

1. A pneumatic tire for vehicle wheels which comprises a radial carcass, a tread band, provided with grooves on its surface, for coming into contact with the ground and situated on the carcass radial outer surface, sidewalls and beads for anchorage of the tire on a wheel rim, and a belt structure between the tread band and the carcass, the tire being characterized in that a fiber-reinforced elastomeric intermediate layer is placed between said belt structure and said tread band.

2. The tire of claim 1, wherein the fiber-reinforced elastomeric intermediate layer comprises a compound material, and short reinforcing fibers.

3. The tire of claim 2, wherein the short reinforcing fibers comprises an aramid polymer.

4. The tire of claim 2, wherein the short reinforcing fibers are oriented at an angle of substantially 0° with respect to a equatorial plane of the tire.

5. The tire of claim 2, wherein the compound material is selected from natural rubber, isoprene rubber, emulsion-polymerized styrene butadiene rubber, solution polymerized styrene butadiene rubber, and butadiene rubber.

6. The tire of claim 2, wherein the concentration of the short reinforcing fibers in the compound material is between about 5 and 15 phr.

7. The tire of claim 2, wherein the concentration of the short reinforcing fibers is between about 7 and 11 phr.

8. The tire of claim 1, wherein the fiber-reinforced elastomeric intermediate layer is incorporated into said tread band.

9. The tire of claim 2, wherein the compound material comprises greater than about 50 % natural rubber.

10. The tire of claim 2, wherein the compound material comprises a concentration of carbon black is between about 20 and 80 phr.

11. The tire of claim 1, wherein the fiber-reinforced elastomeric intermediate layer has a thickness greater than 1 mm.

12. The tire of claim 1, wherein the fiber-reinforced elastomeric intermediate layer has a thickness between 1.5 mm and 3 mm.

13. The tire of claim 1, wherein the fiber-reinforced elastomeric intermediate layer has, in cross-section, two edge portions being thicker than a central portion.

14. The tire of claim 13, wherein the two edge portions are both between about 25 % to 75 % thicker than the central portion.

15. The tire of claim 13, wherein the two edge portions are both about 33 % thicker than the central portion.

16. The tire of claim 1, wherein the fiber-reinforced elastomeric intermediate layer has a width, the two edge portions each comprise about 2/7ths of the width, and the central portion comprises the remaining 3/7ths of the width.

17. The tire of claim 1, wherein said belt structure comprise at least one layers of rubberized fabric comprising cords that crisscross each other and are both angled with respect to a equatorial plane of the tire.

18. The tire of claim 1, wherein is absent a layer of rubberized fabric with longitudinal reinforcing cords lying at an angle of substantially 0° with respect to a equatorial plane of the tire.

19. The tire of claim 1, wherein the tire excludes one or more layer selected from the group comprising: a rubber sheet, a 0 degree layer, and an underlayer.

20. The tire of claim 1, wherein said fiber-reinforced elastomeric intermediate layer is the only layer placed between said belt structure and said tread band.

21. A method of manufacturing a tire comprising at least one belted layer, a tread band above the at least one belted layer, and a fiber-reinforced elastomeric intermediate layer disposed below the tread band and above the at least one belted layer, comprising the steps of:

providing the at least one belted layer;

disposing the fiber-reinforced elastomeric intermediate layer on an upper surface of the at least one belted layer; and

disposing the tread band on an upper surface of the fiber-reinforced elastomeric intermediate layer.

22. The method of claim 21, wherein the method excludes the incorporation of one or more selected from the group comprising: a rubber sheet, a nylon layer, and an underlayer.

23. A method of manufacturing a tire comprising at least one belted layer, a tread band above the at least one belted layer, and a fiber-reinforced elastomeric intermediate layer disposed below the tread band and above the at least one belted layer, comprising the steps of:

providing the at least one belted layer;

extruding the fiber-reinforced elastomeric intermediate layer together with the tread band to form a co-extruded product where the fiber-reinforced elastomeric intermediate layer is incorporated into a bottom surface of the tread band; and

disposing the co-extruded product on an upper surface of the at least one belted layer.

24. The method of claim 23, wherein the method excludes incorporation of one or more layer selected from the group comprising: a rubber sheet, a 0 degree layer, and an underlayer.